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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|----------------------|----------------------------------------|-----------------------------|
| 10/669,403 | 09/24/2003 | Viacheslav A. Petrov | UC0315 US NA | 5058 |
| 23906 7590 03/23/2009 E I DU PONT DE NEMOURS AND COMPANY LEGAL PATENT RECORDS CENTER BARLEY MILL PLAZA 25/1122B 4417 LANCASTER PIKE WILMINGTON, DE 19805 | | | EXAMINER VIJAYAKUMAR, KALLAMBELLA M | |
| | | | ART UNIT 1793 | PAPER NUMBER |
| | | | NOTIFICATION DATE 03/23/2009 | DELIVERY MODE ELECTRONIC |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PTO-Legal.PRC@usa.dupont.com

| | | | |
|------------------------------|--------------------------------------------|--------------------------------------|--|
| Office Action Summary | Application No. 10/669,403 | Applicant(s) PETROV ET AL. | |
| | Examiner KALLAMBELLA VIJAYAKUMAR | Art Unit 1793 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 January 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 15 and 22-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 15 and 22-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

- A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 01/02/2009 has been entered.
- Applicant's amendment filed 12/15/2008 has been entered. Claims 15, 22 and 23 were amended. New claims 33-38 were added Claims 15 and 22-38 as amended are currently pending with the application.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
1. Claims 15 and 22-32 are rejected under 35 U.S.C. 103(a) as obvious over Spreitzer et al (WO 02/072714 Sept 19, 2002 as evidenced by US 6,994,893).

The use of phrase "for depositing an active material on to a surface" in the claims have not been treated with patentability. A recitation of the intended use of the claimed invention must result in a

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structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

Spreitzer et al disclose a process of producing organic semiconductor layers for PLED by ink-jet printing of solutions of polymer semiconductors in a mixture of two different organic solvents [US 6,994,893; Abstract, Cl-17, Claim-1]. The solvents included trifluoromethoxy-benzene (Cl-18, Claim-19) and the polymers included PAV, PF, PSF and PPP <Electro-luminescent> (Cl-17, Claims 6-9).

The prior art fails to teach a composition with Rf being C2-C3 fluorinated alkyl per the claims 15, 22 and 23.

However, it would have been obvious to a person of ordinary skilled in the art to substitute the trifluoromethoxybenzene in the composition of Spritzer with either a C2 or C3 fluoroalkyl as functional equivalent because they are the homolgs of the C1 compound and homologs (compounds differing regularly by the successive addition of the same chemical group, e.g., by -CH2- groups) are generally of sufficiently close structural similarity that there is a presumed expectation that such compounds possess similar properties. *In re Wilder*, 563 F.2d 457, 195 USPQ 426 (CCPA 1977).

With regard to the properties in claims 24-32, the prior art composition is similar to that claimed by the applicants, and similar compositions are expected to possess similar properties.

With regard to claims 33, 35 and 37, the prior art teaches printing of the composition for producing layers of organic semiconductors by gravure printing and by spin coating (Abstract; Cl-16, Ln 64-68).

With regard to claims 34, 36 and 38, the prior art teaches printing of the composition for producing layers of organic semiconductors by ink-jet printing (Abstract; Cl-4, Ln 37-40).

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Response to Arguments

Applicant's arguments filed 12/15/2008 have been fully considered but they are not persuasive:

The examiner withdraws the objection to claims 23 and 30-32 over the claims 15 and 24-26 in view of the differences between them (Res, Pg-7). The provisional ODP rejections over the claims 10/669,404 are withdrawn over the TD filed 03/20/2007 that was accepted by the office.

In response to the arguments about the intended use versus functional element in the instant claim limitations (Res, Pg-8), the instant claims are drawn on composition/s for depositing electroluminescent active materials on to a surface i.e. an intended use, and does not result in a structural difference between the claimed invention and the prior art by Spreitzer in order to patentably distinguish the claimed invention from the prior art. Even though Spreitzer does not expressly teach a coating solution for depositing electroluminescent active materials on a surface as use of his composition, it clearly teaches producing layers of organic semiconductors that include organic electroluminescent materials by printing, and the two different intended uses are not distinguishable in terms of the composition, see *In re Thuau*, 57 USPQ 324; *Ex parte Douros*, 163 USPQ 667; and *In re Craige*, 89 USPQ 393. Spreitzer clearly teaches a dispersion of organic semiconductor in an organic solvent mixture and depositing the dispersion on a surface by printing forming an active layer.

In response to the argument that Spreitzer teaches using a solvent mixture selected based on different boiling points (Res, Pg-10), the instant claim limitation of comprising does not exclude additional solvents in the instant claims. In response to the argument that Spreitzer does not teach the claimed compositions, nor does Spreitzer teach the selection of liquid media that, in combination with an active material, will produce a composition having a static contact angle of less than 40°; Spreitzer clearly teaches dispersion/solution comprising electroluminescent materials such as PAV, PF, PSF, PPP in solvent mixtures comprising trifluoromethoxybenzene and 1-fluoro-3,5- dimethoxybenzene. With regard to the property of the static angle, the prior art composition is similar to that claimed by the applicants, and expected to possess similar properties, and It is not necessary that the prior art suggest the combination to achieve the same advantage or result discovered by applicant. *In re Linter*, 458 F.2d 1013, 173 USPQ 560 (CCPA 1972).

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In response to the argument that Spreitzer teach against embodiments of the present claims (no benzylic CH₂ or CH groups, no more than two methyl groups, etc.); two substituent groups are encompassed by the instant claim limitation of m=0-5, n=0-5 and m+n is no greater than 5 in claims 15 and 23 and the structures in claim-22.

For the reasons set forth above, applicants fail to patentably distinguish their composition over prior art.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KALLAMBELLA VIJAYAKUMAR whose telephone number is (571)272-1324. The examiner can normally be reached on M-F 07-3.30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on 5712721358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/KMV/
March 15, 2009.

/Stanley Silverman/
Supervisory Patent Examiner, Art Unit 1793